California GARDEN

JANUARY–FEBRUARY 1976
Volume 67, Number 1
Fifty Cents

EVENTS PAGE

SHOWS

January 17 & 18, 1976: San Diego Camellia Society "mini" Show; Majorca Room, Casa del Prado, Balboa Park; Saturday 12 noon to 5:00 p.m.; Sunday 11:00 a.m. to 5:00 p.m.; FREE.

February 7 & 8, 1976: San Diego Camellia Society's 29th Annual Spring Show; Conference Building, Balboa Park; Saturday, 1:00 p.m. to 5:00 p.m.; Sunday 10:00 a.m. to 5:00 p.m.; the theme "Jewels of the Orient"; 50 cents admission.

February 21 & 22, 1976: San Diego Capter, Ohara School of Ikebana presents their second show; Majorca Room, Casa del Prado, Balboa Park; Saturday and Sunday 11:00 a.m. to 4:30 p.m.; FREE.

February 28 & 29, 1976: San Diego County Orchid Society "mini" Show; Majorca Room, Casa del Prado, Balboa Park; Saturday 11:00 a.m. to 5:00 p.m.; Sunday 10:30 a.m. to 5:00 p.m.; FREE.

March 27 & 28, 1976: San Diego Chapter No. 119, Ikebana International will present its Eighth Annual Festival of Ikebana and Japanese Art; open both days 11:00 a.m. to 4:30 p.m.; Casa del Prado, Balboa Park; FREE.

MEETINGS

January 27, 1976: Mrs. John Kirkpatrick's Flower Arrangement Class; Room 101, 10:00 a.m. to Noon.

February 17, 1976: San Diego Floral Association Meeting; Program: "For Polynesians—Plants of the Pacific"; by Dr. Donald P. Watson, Professor Emeritus of the University of Hawaii, where he was chairman of the Department of Horticulture.

February 24, 1976: Mrs. John Kirkpatrick's Flower Arrangement Class; Room 101, 10:00 a.m. to Noon.

TOURS

January 31, 1976: Tour to the Descanso Gardens in La Canada, featuring camellias, azaleas and others at this former estate. Leave Balboa Park at 8:00 a.m.; the La Jolla Library at 8:30 a.m.; reservations call 232-5762; $8.50.

February 27, 1976: (Friday) Tour of the Japanese Gardens under the auspices of UCLA at Westwood. Guided tour of the gardens and the campus. Leave Balboa Park at 8:00 a.m.; La Jolla Library at 8:30 a.m.; reservations call 232-5762; $8.50.

March 27, 1976: Rancho Santa Ana Botanical Gardens; for more information call 232-5762; $8:00.

OFFICERS

PRESIDENT
Mrs. Harley Cope

FIRST VICE-PRESIDENT
Mrs. Don Donahue

SECOND VICE-PRESIDENT
Capt. Spencer Church

TREASURER
Dr. George W. Bremner

CORRESPONDING SECRETARY
Mrs. L. H. Silveira

RECORDING SECRETARY
Mrs. Eileen Vance

PAST PRESIDENT
Mrs. Colin Macdonald

DIRECTORS

Term 1973–1976
Mr. F. George James
Mrs. H. A. Cordes
Mrs. W. J. Dinesen

Term 1974–1977
Miss Christine Springston
Mrs. Thomas O'Reilly
Miss Frances Clare

Term 1975–1978
Dr. Donald Boyer
Mrs. David Westheim
Mrs. Eugene Whigham

Park Representative
Mr. George Kempland

HONORARY LIFE MEMBERS

Anne Robinson Tedford
Chauncy I. Jerabek
Alice Mary Clark
Ethel Hoyt
Ada Perry
Samuel Hamill
Etta Schwieder
Margaret Eddy Fleming

EDITORS

EDITOR
Craig W. Silgjord

ASSOCIATE EDITOR
Bill Gunther

EDITOR EMERITUS
Alice Mary Clark

DEPARTMENT EDITORS
Book Reviews—Theresa Yianilos
Circulation—Penny Bunker
Herbs—Josephine Gray
Historical—Ethel Hoyt
Horticulture—George James
Native Plants—Helen Witham
Photography—Betty Mackintosh
Research—Nibby Klinefelter
Vegetables—Rosalie Garcia

For advertising rates and procedures, please contact the Editor, at 296-1217 or write to Editor, California Garden Magazine, 4093 First Avenue, No. 4, San Diego, CA. 92103. We reserve the right to make final determination as to the suitability of any advertising.

California GARDEN

Published Since 1909 by the SAN DIEGO FLORAL ASSOCIATION
Casa del Prado, Balboa Park, San Diego, California 92101

Monday through Friday
232–5762

VOLUME 67, NUMBER 1

ABOUT THE COVER

Larry Eifert, an artist from Ferndale, California, exhibits his watercolors and drawings in his own gallery there. "I'm most interested in helping people to see things around them they don't normally see."

ABOUT THE CONTENTS

4 What On Earth Is Soil?
7 Trailing Mexican Rose *by GEORGE BREMNER*
8 Passion Flower *by KATHLEEN CRAWFORD*
9 San Diego's Rose Garden *by RICHARD STREEPER*
10 Early Vegetables *by GEORGE JAMES*
13 Some Food Is Free *by GENEVIEVE McALLISTER*
14 Cactus—Water Jug or Pandora's Box *by GEORGE RADWIN*
16 Arranging Banksia *by ADRIENNE GREEN*
19 Backyard Grapes *by ROSALIE GARCIA*
22 The Giant Strelitzia *by ALICE CLARK*
23 Calendar Art *Repetition of Pleasure*
24 The Earthworm—Nature's Soil Builder *by STEPHEN TOLLEFSON*
26 *now is the time*
28 *leafin' thru*
29 *florascope*

POSTMASTER: SEND FORM 3579 TO:
CALIFORNIA GARDEN, CASA DEL PRADO, SAN DIEGO, CA 92101

PLEASE NOTIFY CIRCULATION DEPARTMENT WHEN YOU CHANGE ADDRESSES

California Garden is a non-profit publication of the SAN DIEGO FLORAL ASSOCIATION, a non-profit horticultural organization. The magazine is published bi-monthly. Manuscripts are invited. Manuscripts and illustrations submitted will be handled carefully, but we cannot assume responsibility for their safety. All opinions expressed are those of the author and do not necessarily reflect the views of the editors or the San Diego Floral Association. ©1972 by San Diego Floral Association. No part of this magazine can be reproduced without the written consent of the Editor. California Garden is on the list of publications authorized by the San Diego Retail Merchants Association. Entered as second-class matter, Dec. 8, 1910 at the Post Office at San Diego, California under the Act of March 3, 1879.

What On Earth Is Soil?

Reprinted with permission from University of California's Agricultural Extension program's booklet "What On Earth Is Soil?".

THE ANSWER to this question is: just about everything that isn't air or water. The soil is a blanket covering practically all of the earth's land surface. In some places, it is a few inches thick; in others, it may be several feet thick. In either case, it consists of loose material in and upon which plants grow. Without this loose material, land plants could not have evolved. Without land plants, land animals would not exist. We owe our existence to the soil. It is the meeting place of living and non-living matter.

How did soil get here? What is it made of? Why do plants grow in it? The answers to these questions can delve deeply into geology, chemistry, physics, and biology. Without getting too technical, we will try to answer these questions in the paragraphs that follow.

Geologists are primarily concerned with the earth's crust—a shell of solid rock about 20 to 30 miles thick surrounding the earth. Soil scientists, in turn, study the thin layer of loose material that covers this shell. This layer, the soil, is a few inches to a few feet thick, but without it there would be no land life on earth.

Every solid rock, when it is exposed at the surface of the earth, slowly disintegrates into loose material through a process called weathering. The breaking up of rocks into smaller particles occurs by frost action, expansion and contraction of rocks due to repeated temperature changes, and by the grinding action of streams, glaciers, and wind. This physical weathering is aided by chemical weathering processes, which cause the rock minerals to slowly dissolve and change by the action of water, carbon dioxide, and oxygen. Weathering is so universal that the only land areas of the world that are not covered by soil are those rocky surfaces that are so steep, or subject to such slow weathering, that erosion is able to remove the loose soil material as fast as it forms.

When does the loose rock material become soil? There is no clear-cut answer, but it is usually called soil if it is supporting plant growth. There is no minimum or maximum thickness necessary for material to be called soil. What is required is that the material be a medium in which plant roots can grow and from which they can obtain water, air, and the mineral elements essential to plant growth.

Many kinds of soil are found on the earth's surface: soils a few inches to many feet thick; soils made of coarse sand and others of fine clay; soils that mostly contain mineral particles and others made of decomposed plant materials (organic soils); and red, orange, yellow, blue, green, gray, brown, black and white soils. Soils are complex mixtures of living and non-living matter and are therefore very difficult to study. During more than a century of scientific study we have learned a great many useful and interesting things about soil. However, there is still much we do not understand.

It is useful, particularly in California, to know whether a soil has developed directly above a weathered rock, or if the weathered rock material has been transported and deposited to form a soil many miles from the original parent rock. The former, called residual soils, usually occur on mountain slopes and in the foothills. The latter—depositional soils—occur in valley locations. Most depositional soils were deposited by streams flowing out of the mountains carrying sand, silt, and clay from the erosion of residual soils and from the breakup of rocks in the stream beds. These are called alluvial soils. In some places, sand and silt soil materials have been deposited by wind, and are called aeolian soils.

In California, alluvial soils (and some aeolian soils) are usually more intensively farmed and are more productive than residual soils. This is because alluvial soils are usually deeper, more level, more accessible to irrigation water, and more economical to farm than residual soils. Intensive agriculture uses about 10 per cent of California's total land area. Over half the land area in the state consists of residual soils of the uplands. These are covered

by timber, brush, or grass. Another one-fourth consists of unfarmed desert soils.

The actual particles that make up soils come in many sizes and shapes. These particles are mixtures of weathered and unweathered mineral grains from the original rocks, new minerals that have formed in the soils, living micro-organisms, and dead organic materials in all stages of decay. The organic fraction in California valley soils is usually less than five per cent of the soil weight and often less than one per cent.

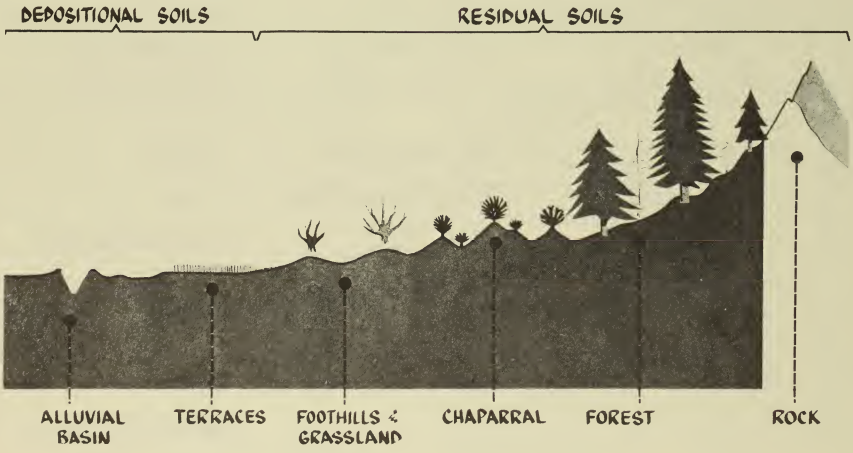
To simply the description of the mineral portion of the soil mixture, three sizes of particles have been defined. These are called (in order of decreasing size) sand, silt, and clay. All soils are mixtures, in one proportion or another, of these three types of particles. The proportion of each particle type in any particular soil can be estimated by rubbing the moist soil between the thumb and fingers to determine its "feel". Sandy soils are scratchy or gritty. Silty soils are smooth and slippery, but not sticky. Soils high in clay are both slippery and sticky.

In addition to influencing the feel of the soil, each of the particle sizes contributes somewhat different properties to the total soil. The properties affected by particle size are: water percolation, water retention for plant roots, aeration, nutrient supply, and soil strength. In general, sandy soils have faster water percolation and better aeration than finer textured soils, but their ability to retain water and supply nutrients is lower. They also have less strength and are therefore easier to cultivate.

In some soils, called loams, these characteristic properties are intermediate. This is because the particles are in the right proportions to mask the effects of each other on the soil feel and to blend the effects on water retention and percolation, aeration, nutrient supply, and strength. Because of these intermediate properties, loam soils are versatile soils capable of growing a wide variety of crops.

If a soil has somewhat more sand, so that the grittiness begins to be felt, that soil is called a sandy loam and its other properties are dominated more by the coarse sand particles. The name, sandy loam, refers to the texture of this soil. Similarly, there are silt loams and clay loams, sandy clay loams, and silty clay loams, silty clays, and sandy clays, and finally just sands, silts, and clays—all named for different soil textures depending on the predominant size of the particles. The more predominant one size of particle is in a soil, the less versatile that soil is for many crops, and the more exacting are the management requirements for good plant growth.

All plant roots need water, air, and certain



mineral nutrients. With a few minor exceptions, these plant needs must be obtained from the soil by the roots. So the soil must be able to store water, to provide air, and to release mineral nutrients—all at the same time.

Soil particles attract water and can hold a certain amount in small pore spaces between particles. Plant nutrients from decomposing minerals, organic matter, and fertilizers dissolve in the water held in these pores. Water in large pores drains downward under the influence of gravity, leaving the pores filled with air. And so plant roots are able to get their water and nutrients from the small pores and their air from the larger pores.

This arrangement works well in soils that have a suitable distribution of large and small pores, such as the medium-textured loams. Sandy soils however, have many large pores but few small ones. Water percolates through them readily but little is held back for use by roots. For this reason, sandy soils may need to be watered and fertilized more frequently than finer textured soils. At the other extreme, the fine-textured silt and clay soils have many small pores but few large ones. Water and nutrient retention are usually more than adequate for plants, but water often percolates slowly through these soils, providing temporary zones with poor aeration.

There are 16 elements that have been proven to be absolutely essential for plant growth and reproduction. The major elements (or macro-nutrients) are needed in relatively large quantities by plants; the minor elements (or micro-nutrients) are no less essential but are needed in much smaller quantities. Carbon, hydrogen, and oxygen are the building blocks of carbohydrates and fats. These elements, plus nitrogen and sulfur, are found in proteins. Phosphorus is essential in the energy transfers of cells and also occurs in the cell genetic material. Calcium is a constituent of pectic materials, which help hold cells together. Magnesium is the central atom of the cholorphyll molecule in the cells of green plants. The role of potasium is not yet understood, although it has been clearly demonstrated that plants will not grow without it. Iron is required for the formation of chlorophyll and in the oxidation reactions of the cytochrome chain. Several of the other minor elements function in enzymatic reactions necessary for plant growth.

In the natural environment, most plant nutri-

ESSENTIAL PLANT ELEMENTS

MAJOR ELEMENTS FROM AIR AND WATER	MAJOR ELEMENTS FROM SOIL	MINOR ELEMENTS FROM SOIL
CARBON	NITROGEN	IRON
HYDROGEN	PHOSPHORUS	ZINC
OXYGEN	SULFUR	MANGANESE
	POTASSIUM	COPPER
	CALCIUM	CHLORINE
	MAGNESIUM	BORON
		MOLYBDENUM

ents were initially released slowly by the weathering of rocks. An exception was nitrogen, which is found in very low amounts in rocks but is needed in large quantities by plants. Fortunately, blue-green algae, some bacteria, and some higher plants developed the ability to fix atmospheric nitrogen in the soil. As plants died and decomposed, an accumulation of nutrients was built up in the soil, which was recycled by plants together with the elements released from rocks.

However, the natural accumulation of nutrients in soils was not necessarily balanced in relation to the needs of plants. This became particularly evident when the virgin soils of America were first farmed. At first, crop yields were fairly good without fertilization. But one element, nitrogen, was usually limiting and became deficient after one to a few years. If nitrogen were supplied, another nutrient might become limiting, and so on. The next nutrient that may be limiting in California annual crops is phosphorus; in tree crops, zinc. Potassium is usually in adequate supply in the drier climates, but it and sulfur may become deficient in higher rainfall areas. Iron deficiency is a special case in alkaline soils, where high pH makes the iron present unavailable to some species of plants.

Although the organic fraction of California soils is usually small, it is important in providing a reservior of nutrients and in improving the tilth of the soil. It is difficult to build up the percentage of organic matter content because it decomposes so rapidly in the hot summer climate. Soil micro-organisms attack the organic compounds and use them for energy. In the process, they convert the carbon, hydrogen, and oxygen into gaseous carbon dioxide and water, at the same time returning the other essential elements to their inorganic form. This process is known as mineralization of the organic matter and must occur before plants can use the essential elements in it. The inorganic elements released from organic matter are identical to the same elements released from weathered rocks or from chemical fertilizer. Plants grown using a balanced mixture of nutrients from any one of these sources are equivalent to each other in growth and quality.

At the beginning of this century it was recognized that a map and inventory of the different varieties of soils would be very useful for planning and managing agricultural use of the land. Soil surveys have been made since that time and areas surveyed during the early years have been resurveyed as agriculture has become intensified. Soil surveys contain a wealth of information in both map and descriptive form about soils, their productivity, and adaptability. □

Trailing Mexican Rose

by GEORGE BREMNER

AGAIN COMMON NAMES may be a cause for trouble. Is this actually in the genera *Blakea* as reputed and under which name it is being sold, or is it *Schizocentron elegans*—Spanish Shawl? I can't find a listing for *Blakea* in either Exotica or Bailey. Perhaps someone with more persistence or a better detective agency can tell us. So far as I can trace the lineage of this particular plant, it started with a gift plant to Horace Anderson of Leucadia who in turn gave a plant to Mr. Daniel Collin of Carpenteria. Apparently he was quite taken by the plant for he began propagation and distribution, and between April 1 and October 15 of 1974 had sold 12,000 pots! When you realize that in a time which people are calling a recession that this many of a single variety sold at retail prices of $5.95 to $12.95, someone else likes it besides the propagator!

Whatever the name—it is an entirely delightful plant for a hanging basket or trailing over a bench. Cultural instructions indicate a subtropical heritage, for it needs forty to sixty per cent filtered sunlight with temperatures of 45 to 85 degrees, away from drying heat or air conditioning and a light, porous, rich soil. It is indicated as useful indoors, however the only ones I've seen in good bloom were outside in lath houses or in a place with eastern exposure getting early morning sun. Too much sun or dry wind or cool temperatures will result in a smaller redder foliage and a decrease in the flower size.

Nearly ever-blooming in our climate, the flower is very reminiscent of the wild rose—very simple, but beautiful in a lavendar pink about 1½ inches in diameter. (The description of *S. elegans* is magenta. Can this then be *S. blakea* instead of *Blakea*? . . . or is it just a difference in fertilization and/or light?) Buds and seed pods will remind old farm hands of very young cockleburs. Leaves are a medium dark green upper with a definite purplish cast to the lower sides. Light brown vining stems give a nice contrast of their own.

Passion Flower

by KATHLEEN CRAWFORD

EARLY SPANISH missionaries in the New World were impressed by the resemblance they saw between the form of these flowers and the emblems associated with the Crucifixion. They named it "Pasionaria" which later became Latinized to *Passiflora*. The genus contains around five hundred species, mostly American, and mostly tropical. It is an interesting family, most often seen as vines, climbing by tendrils, reaching up to open their extraordinary flowers in the sun.

Various kinds to quite well in southern California, especially the blue Passion Vine, *Passiflora caerulea* and the pink *P. alata.* Even more frequently seen is a hybrid of these two called *P. pfordtii*, which inherits many of the best features of both parents forming an evergreen vine twelve to fifteen feet tall. All summer long this hybrid opens its lovely flowers, each one lasting a day. So many are in bloom that they seem continuous for months. Some of the flowers are fragrant such as those of *P. alata*; others are not—like *P. caerulea.* The relatively short-lived *P. pfordtii* will last for more years if it isn't attacked by too many caterpillars.

P. pfordtii, and most others, prefer a sunny spot with enough water. They are not demanding. Ours is planted in semi-shade, so it just climbed the nearest shrubs, the wall, and up the dry basal leaves of a California Fan Palm, spreading attractive leaves and spectacular flowers out to the sun. Some types bear fruit—often quite large—but ours does not. □

San Diego's Rose Garden

by RICHARD STREEPER

MOST ROSE GROWERS in San Diego believe that this is the most favored place in America for the growing of the world's most favored plant—the rose. We have an even and temperate climate which produces an abundance of growth. Cultural problems of other areas such as blackspot and Japanese beetle are little known here. We have a large and active rose society which stages the West's largest rose show each year. Considering these facts, it seems surprising that San Diego has not had a major public rose garden until this year.

Interest and activity in establishing a public garden go back at least sixty years to 1915 when the first roses were planted in Balboa Park under the guidance of Forrest Heiatt. Subsequent to that time, four other rose gardens have been proposed or executed with limited success. In 1969 the present rose garden project was born. Dick Streeper, the president of the Rose Society, headed a committee composed of Jim Kirk, Carl Truby, Jean Kenneally, and Fred Walters to work with the City to establish a rose garden. Progress was exasperatingly slow. Many months were spent working on site evaluation and selection. A site adjacent to the Federal Building on President's Way was selected and approved by the Balboa Park Committee. An architect was selected and preliminary plans prepared. Then, as so often in the past, there was a change in City personnel and past decisions were re-examined. After more than a year of delay, a new Balboa Park Committee voted to establish the garden near the Plaza de Balboa. In 1973, with the able and sensitive assistance of Jim Miltch, the Parker Foundation agreed to donate a major amount of money to establish a rose garden. This money, together with the guidance provided by the San Diego Rose Society, has resulted in the Inez Grant Parker Memorial Rose Garden which is now the largest rose garden in San Diego County.

The garden is located on Park Boulevard at the pedestrian overcrossing east of the Plaza de Balboa. The garden is approximately two acres in size. The plan calls for three large circular beds at this time, the largest being semi-circular, pending completion of the filling of Florida Canyon at the east side of the garden. It is anticipated that the final phase of construction will be initiated in about one year when the filling is completed.

Most of the rose plants in the garden were donated by California rose producers. An initial donation of over 2,000 plants was made by Armstrong Nurseries in June, 1973. Other plants were donated by Howard Rose Company, Jackson and Perkins Company, Weeks Wholesale Rose Grower, San Joaquin Rose Company, Ralph Moore Miniatures, McDaniel's Miniature Roses, Tiny Petals Miniature Roses, and George Johnson's Rose Nursery. The garden will display new roses prior to introduction. Application has been made to the All–America Rose Selections to designate the garden as an official AARS Display Garden.

The garden was planted by San Diego Rose Society members and Balboa Park nursery staff during March, 1975. In the fall, a number of plants were six feet tall and the garden was very colorful. Varieties which have been outstanding so far included Spirit of '76, Paloma, Ole, Aquarius, Sunrise-Sunset, Century Two, Jazz Fest, China Doll, and Pinkie.

The San Diego Rose Society has established a trust fund for the purpose of receiving tax-free gifts and bequests for the support of the garden. The fund is growing with several gifts from interested individuals and groups. □

If you can spend some time, even a few hours, with someone who needs a hand, not a handout, call your local Voluntary Action Center. Or write to "Volunteer," Washington, D.C. 20013

We need you.

The National Center for Voluntary Action.

Early Vegetables

by GEORGE JAMES

IT IS A WELL known fact that there are risks in planting warm weather vegetables before the end of March. There may be enough rain to cause the seed to decay, or there may be frosts which might damage or kill the tender plants. The temperature during the day at this time of the year can be pleasant, but at night it falls below the point where growth is possible for the summer kinds of vegetables. The growing season for summer vegetables can commence several weeks before the garden conditions are suitable if there is a warmer place in which to start the seeds and grow the plants while waiting for suitable outdoor conditions. A glass house is ideal for this purpose, but not many gardeners have such a facility. A hot bed, located against a south wall, tightly covered with glass or plastic, and heated with a soil cable is suitable. A cold frame, similar to a hot bed except for the soil cable, can also furnish some protection and additional warmth ideal for starting seeds and raising young plants. A warm, enclosed patio, a shed or even a garage could also be used for protection.

Seeds can be started in the dark, but as soon as the sprouts appear, light is needed. If the place being used is too dark, the seedlings may be shifted into a brighter location during the day and returned to the darker but warmer location for over night. A flourescent lamp suitable for growing plants may be used. It will not only provide sufficient light, but will also add warmth to the growing area.

Seedlings which have been grown under the conditions described here will be tender and suffer a serious set back if they are exposed to out door conditions without proper preparation. Such plants can be hardened off by exposing them each day to the outdoor conditions for a slightly longer period, taking a week to ten days to complete the hardening process.

Seedlings may be grown in flats (boxes), pony packs (small containers in which seedling plants have been purchased), or in pots. Pots should be from two and a half to four inches in depth and width, although there are times when larger pots can be used. The pots may be of clay, plastic, peat, or they may be Dixie Cups, or styrofoam cups if drain holes are punched in their bottoms. Plants that will be set back should their roots become damaged, should be grown in pots. The clay and plastic pots can be inverted and taped on a solid surface and the root ball will slide out intact. The peat pots are soaked and planted in the garden and roots can grow through them; the pots will eventually disintegrate. The Dixie Cup will peel off, leaving the ball intact and the styrofoam cup can be inverted and taped out like the clay pot.

Potting soil sold by nurseries and garden shops is suitable for the seeds to be grown in and has the advantage of being (in most cases) sterilized before sale so the chances of unwanted organisms being present to attack the seedlings has been greatly reduced. Soil should be moist but not wet when used, and it should be compacted by tamping it into the growing container before the seed is planted.

Seeds may be planted in furrows, holes, or may be broadcast over the surface of the soil. They are then covered with loose soil which is tamped to assure a firm union between the seeds and the soil. Compact soil enables water to move from the soil to the seed, and the speed and thoroughness of this transmission is an important factor in deciding the number of seeds sprouted and how quickly they sprout.

Vegetable seed packages in some cases indicate how deeply the seed contained should be planted. By using the containers mentioned earlier, it is usually possible to cover as the packages mention. There is no harm if seeds are not covered as deeply as the package recommends, but they should never be planted any deeper. Seeds that have less covering are more likely to dry out, while those planted deeper may not sprout, or the sprout may not be able to grow to the surface of the soil.

Water after planting to be sure there is

sufficient water to cause germination of the seed. The safest way to water, if it is possible, is to place the container in which the seeds have been planted in water and allow the water to soak up through the soil until the entire soil mass is wet well. When water is applied in this manner, there is no danger of washing the seeds out, or of covering them too deeply with soil washed over them by the irrigation water.

Containers can be covered with sheets of glass or clear plastic. These will keep the soil warmer, hasten germination, and reduce the need for additional waterings. Coverings may be taken off during the warmest part of the day to allow excess water—which will collect on the covering—to dry. The coverings should be removed for good once germination is nearly complete.

Insect pests are not likely to attack plants at this time of the year, but if they do, the non-poisonous vegetable dusts may be used without damage to the plants. It is recognized that some of the factors that regulate the time of harvest are beyond the control of the gardener. Still, there are other factors which, if taken advantage of, will hasten the ripening of the crop. One of these is the time needed for a variety to grow to maturity. This may be indicated in one of two ways—either specifically stated on the seed package or by the use of the word "early" in the actual name of the variety. The word "early" indicates the variety will mature before another variety of the same vegetable. Take time to consider these factors when choosing the varieties you wish to plant.

Vegetables grown in pots can be transplanted with less damage to the roots than those grown in flats or pony packs. For this reason cucumbers, squash, melons and beans—all of which suffer if root damage occurs—are pot grown. Large pots, five to six inches in diameter and depth, may be used. If several seeds are planted in each pot and the resulting plants planted in hills, they may be planted without separating. If smaller pots having less plants in them are used, several may be planted close together to make a hill. Tomato, eggplant,

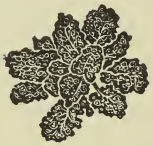
and peppers can be started in flats and transplanted to pots when the plants are large enough to handle. They may remain in the pots until well developed and the out side temperatures become warm enough for their transfer. Lettuce, either head

or leaf varieties, can be started indoors in flats or pony packs and if not planted too quickly (allowing for time to grow to transplanting size), can be shifted to the garden. Lettuce will grow at much lower temperatures than any of the vegetables mentioned thus far, and is less likely to be harmed by rain or cold. Early varieties of corn,

which may have smaller ears and produce less of them than other varieties maturing later, can also be started in pots and moved outside when there is a well defined warming trend in the weather. The results will be just as satisfactory and less time, space, and work required if the corn is soaked first until well swollen, then kept moist by covering with damp soil (or wrapping in a towell or similar material) and setting aside until sprouts appear. The sprouted seed can be planted in the garden, several seeds to a hill, before the root or shoot sprouts are over a half inch long.

Root crop vegetables—beets, carrots, radishes, and turnips, can be planted in the garden by the end of March. They form the best roots if they are seeded where they can be allowed to grow to maturity. Vegetables that form edible roots are usually deformed and of little use if transplanted.

The summer frost-tender vegetables such as beans, cucumbers, melons, eggplant, peppers and squash of any kind, will grow faster after transplanting to the garden if they are protected for a few weeks by some sort of covering. Usually most of the days in March and early April are clear and bright but the nights are chilly. Under these conditions plants may be covered by mid-afternoon and allowed to remain covered over night, being uncovered only after the sun is bright again the next morning. Paper bags inverted over the plants and held in place with dirt around the edges make suitable coverings. Opaque plastic gallon jugs with the bottoms cut out may also be used as can sheets of clear plastic suspended above the plants by bows of wire and held in place with dirt around the edges.



The gardener who does not have the time or place to grow his own plants from seed will find some of those mentioned in this article available at garden stores from mid-February on. Some may be in pots which can be placed in a warm, sheltered location and allowed to grow larger before planting in the garden. Plants in pony packs can be transplanted into pots and later transplanted to the garden when they are large enough not to suffer as serious a setback as they would if moved directly from the pony pack. At this season there will also be plants of broccoli, cabbage, brussels sprouts, celery and lettuce available and these are a good investment which can be planted without any further attention or need of protection by coverings. □

Some Food Is Free

Genevieve is a member of Floral Association. It was her mother-in-law who was part Cherokee and taught her about the plants.

by GENEVIEVE McALLISTER

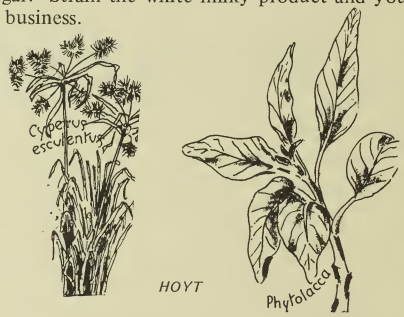
HAVE YOU EVER wondered or given a thought to what the pioneers ate on their trek across the country? Certainly, they were not able to carry all the provisions that they would need for the many months traveling in a covered wagon to their new home. They spiced up their monotonous diet with whatever greens they could find along the wayside or streams.

A relative of mine, who was part Indian, introduced me to her version of eating off the fat of the land. She gathered and prepared weeds, flowers and leaves to give me my first experience in weed eating.

Glasswort or *Salicornia*, has many names such as Chicken Claw, Pickle Plant, California Glasswort. One of the popular names of glasswort on this continent is "Samphire", because of its use for pickles like the Samphire of Europe. The plant is easily recognized especially along the Pacific and Atlantic coast, by its apparently leafless stems, usually branching from near the base. It is succulent and green in summer and is not found outside the salt land marshes. In the spring and the first part of summer they may be no more than an assemblage of green spikes two to three inches high, translucent as fine green jadeite. What you see instead, are a series of succulent, jointed, cylindrical stems around one-quarter inch in diameter, lifting a few inches above shore land. When they poke up early in the warm weather in a bed of bright green shoots, the briny tips will still do a lot for a salad until frost-withering fall. It is also cooked as a pot herb, but when so treated it loses much of its sprightliness. When cut into tender lengths, packed in a jar or bottle, covered with boiling spiced vinegar, sealed and cured for a month, these green shoots make a good hors d'oeuvres or pickles, albeit rather conversation provoking.

Chufa or *Cyperus esculentus*, is also known by the common names Earth Almond, Nut grass. Zula Nuts, and Edible Galingale. Except for several smaller leaves at the top of the slower supporting stalk, all of the green, grass-like leaves of the chufa grow from the roots. They are about the same length as the central flower stalk. The roots are composed of long horizontal runners, terminating in little nut-like tubers. The flowers are numerous, growing in little flat, yellowish-brown spikes. These spikes have a feathery appearance. The stalks, plump and triangular, run about two feet high. A whorl of some three to eight leaves cups loosely about the numerous, spreading blossom spikelets. These account for about two-fifths of the edible sedges total height. All of these lightly hued green leaves have a conspicuous vein along their center and can be up to one-half inch wide.

The edible tubers of this cousin to the historic papyrus are sweet, nutty and milky with juice. Appearing like dark puckered one-quarter to one-half inch nuts, they are clustered about the base of the plant. They may be washed and eaten raw or enjoyed as a cooked vegetable, They dry well in a slow open-door oven and then grind as in a blender. The resulting powder can be mixed with other flour for all kinds of appetizing vitamin and mineral rich cakes, breads and cookies. The Spanish recipe calls for soaking one-half pound well-washed tubers for two days. After draining them, either mash or put them through a blender, along with four cups of water and one-third cup sugar. Strain the white milky product and you're in business.



Arrowhead or *Sagittaria*, is also known as Duck Potatoes, Swan Potatoes, Arrowleaf, Wapatoo, Tule Potatoes. Indians from the Atlantic to the Pacific knew and relished this one-half to three foot tall member of the water plantain family. In spite of the name, all the leaves are not in the shape of arrowheads, although generally enough so for identification purposes. They grow in clusters on long stems at the base of the plant from two to nine inches long and from one-third to one-half of this measure in breadth. Some are long and uniform in width, while others with the stems, resemble lances. They are frequently seen floating, depending on the stage of the water. The flowers appear from July to September and grow in whorls

(Continued on Page 25)

CACTUS—

Mr. Radwin is Curator of Marine Invertebrates at the Museum of Natural History. As a member of the Education Committee of The Cactus and Succulent Society, he writes the "Cactus of the Month" article for their publication.

Water Jug or Pandora's Box

by GEORGE RADWIN

THE SCENARIO is familiar to us all. A visitor to the desert wanders, bewildered through the "wasteland", weak from starvation and dying of thirst. A visitor, to be sure, because the desert is inhospitable to all forms of life save those specifically adapted in form, body chemistry, and behavior to its special rigors. It is a wasteland only to such out-of-place organisms as man. In the traditional scene, the man, weak as he is staggers for days until finally just before collapsing he spies a cactus. The man remembers, in spite of his fevered condition, that cacti contain water and he tears a piece off the plant, sucking its juices greedily. By repeatedly using this strategem the poor, hopeless individual succeeds in saving himself from the slow, painful death of dehydration.

Each time I hear or read a story embodying this piece of desert lore that has attained the status of conventional wisdom, I am reminded of the magazine features I read as a child. "What's wrong with this picture?" Well, there IS something wrong with the scenario above.

Reports of cacti as a source of water come from certain southwest Indian tribes that were aware, presumably on the basis of a painful trial and error process, that certain few species of cacti (namely *Ferocactus acanthodes*—the California Barrel Cactus) could be counted on for a drink when absolutely necessary. This bit of useful desert lore they passed on to prospectors and other friendly, non-Indian desert travelers. Unfortunately this specific information has been generalized until many people, even experienced campers and prospectors, believe that they can count on copious quantities of water from any of the scores of cactus species indigenous to the southwestern United States, Baja California, and northwestern Mexico.

The truth is quite the contrary. All cacti are succulent plants; defined as such because of their tendency to store water in some part of their bodies. Most cacti, however, do not store quantities of water sufficient to succor a person dying of dehydration except immediately following heavy rains. What's more, what water they contain, they "plan" to keep. They do this most commonly by binding it with a viscous, mucus-like substance that makes it considerably less available to our dehydrated friend. In addition, the body fluids of many species of cacti contain chemical substances—alkaloids—a majority of which are very toxic to humans. Many of the better known plant poisons are alkaloid in nature. It is axiomatic that the weakened condition and dehydrated state of the body of a person desperate enough to seek water from cacti would increase the toxic effect of these alkaloids several times over. Indeed if our desert traveler has the presence of mind to turn to "cactus-wrestling", he would probably be better off using crushed cactus pulp as a source of moisture for a simple solar "still" which could distill pure water from the pulp, leaving potentially dangerous chemicals behind.

Nevertheless, the "cactus-water" myth dies hard. It is not so much that knowledge of plant poisons is unavailable, as it is that it has not filtered down to the general public, except in misleading bits and pieces.

For example, the hallucinogenic effect of one cactus species' alkaloid content has formed the basis of one or more religions, has made some young vision-seekers unusually cactus-conscious, and has elicited from the legislature of one state a law prohibiting possession of that species. What is not well understood is the widespread occurrence of these and other alkaloids in the entire cactus group and in other plant groups. Whereas a comparatively mild combination of alkaloids, as found in this species, can cause hallucinations and "visions", in other plants, containing different alkaloids or the same ones in differing concentrations or combinations, can cause severe illness in apparently healthy persons and may cause death in weak, dehydrated individuals.

It is strange to note that because of the ability

of the media to spread items of esoteric interest, it is illegal to possess one species of plant because, when processed, it produces hallucinations. Yet, a great many other plants, many other cacti,as well as the castor bean plant, *Oleander, Dieffenbachia*, and its close relatives, (plants that are not only legal to own but that we grow in our living rooms, along our highways, and around our schools) are very, very lethal.

Removing these few ornamental plants from private gardens would not effectively eliminate the danger, since many weeds, whose presence or absence is not within our control, also contain dangerous chemicals. The only advisable procedure is to follow the practice of medieval kings and mushroom lovers—when in doubt, never taste what you have not identified as safe. □

Photo by BETTY MACKINTOSH.

LA MESA NURSERY

"Everything for the Garden"

Dramatize the garden.

Bankamericard Delivery
Master Charge

FREE GIFT WRAPPING

8480 La Mesa Blvd. — 466-5703

SAN DIEGO'S LARGEST NURSERY FACILITY

. . . with complete, personalized attention to your every garden need

Presidio Nursery and Florist

LINDA VISTA RD at MORENA BLVD
PHONE 297-4216

Walter Andersen Nursery

Nursery Stock and Garden Supplies for Beautiful Gardens

We Specialize in Indoor Plants

free GARDEN CLASSES 9:00 AM each Thursday and Saturday

3642 Enterprise San Diego 92110
Phone 224-8271

7580
Hillside Drive

Overlooking La Jolla Shores, just up the hill from Torrey Pines Road, or down the hill from Mt. Soledad, is **HILLSIDE NURSERY**. Whichever approach you take, you'll find a WONDERLAND OF PLANTS — rare Begonias, Philodendrons, Tropicals, fine House Plants — a wide variety of well grown nursery stock.

Corey Hogewoning, Prop.

Arranging Banksia

by ADRIENNE GREEN

HANDSOME BANKSIAS, members of the protea family, are now growing and flowering in many Southern California gardens. The banksias offer a wide range of textures, forms and colors for the landscape.

The cut flowers are especially cherished by the arranger for their striking beauty plus their "everlasting" quality. The designs in the photographs will change only to a lighter value of their original hue.

With Mr. Howard Asper's contribution of samples from his many varieties, the arranger begins the search for materials to best show them off.

Readily available eucalyptus bark, cast off by the trees, turns out to be a favorite and is used in several arrangements. Twisted roots and vines compliment the blossoms. Even odds and ends from a tool house become comfortable companions.

In picture one, two *Banksia prionotes* and one twisted, weathered root emerge from a ceramic container. The container, an original by James Bonner, fits well with the entire design. The dancing pattern of the wood suggests the silhouette created by the foliage. Square and rectangular shapes on the pottery's surface can be observed also in the open and closed areas of the wood. Two orange flowers contrast in texture and color to the smooth dark container.

In picture two, palm spathes and eucalyptus bark are used with five *Banksia media* in a brown three-columned container by James Bonner. The fuzzy, golden-cast flowers emphasize the leather-like palm spathes. The eucalyptus continues one of the columns.

In picture three, eucalyptus bark is placed both inside and outside James Bonner's rectangular container. *Banksia spinulosa* peer over the smooth wall of the container and climb the upright bark.

In picture four, a *Banksia media* and a *Banksia ericifolia* happily relate to a collection of objects from Mr. Jose Garcia's workshop. The "corn cob" blossoms resemble the shape of the wooden mallet and suggest the form of the tackle with rope. The rake and grill repeat the serrated edge of the leaves and bristle-like petals of the flowers. The rust on the metal objects ties in with the rust color of the banksias.

In picture five, a Japanese ceramic container, white with brown, holds three *Banksia media* plus a couple of pieces of eucalyptus bark. In this asymmetrical design the strong vertical of eucalyptus is reinforced by the banksia bud, contrasting vividly to the horizontal grouping of flowers and leaves.

In picture six, *Banksia spinulosa* flowers are arranged around a single piece of eucalyptus bark. The shiny Japanese container contrasts with the prickly flower forms and rough bark, repeating the red-brown color of both.

In picture seven, a rhythmic peeled wisteria branch embraces two orange *Banksia prionotes*. The movement of the linear silhouette echoes the form of the Japanese container. A few clippings from the foliage of *Banksia spinulosa* nestle at the surface of the container. □

Photos by BETTY MACKINTOSH.

BLUE PACIFIC Nursery, INC.
4876 SANTA MONICA AVE • OCEAN BEACH 222-1151
SAN DIEGO, CALIFORNIA 92107

ONE

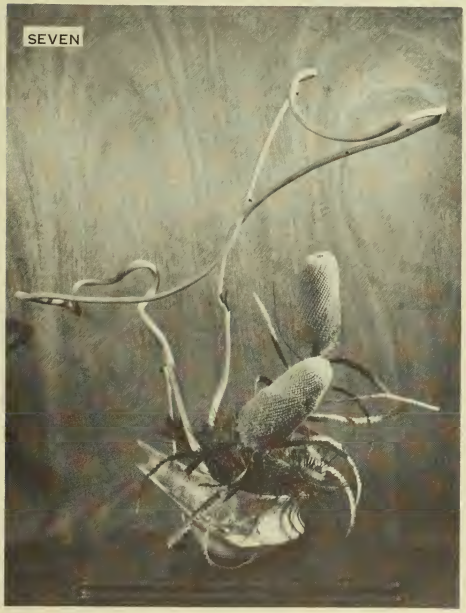
TWO

THREE

FOUR

FIVE

SIX


SEVEN

Backyard Grapes

by ROSALIE GARCIA

WHEN I FIRST came to California and while living in Hollywood, I found a fruit stand in the next block which fascinated me. I could not pass by without loading up with goodies. When the Thompson Seedless grapes began to appear in August, I decided to spend a quarter to see how they tasted—they were new to me then. When the man began picking up enormous bunches filling two bags (five pounds each), I said "I only wanted a quarter's worth!" He said "Ma'am, that's what you got". I ate grapes for days and really got my fill. Imagine what ten pounds of the same grapes would cost today! This enormous jump in the price of table grapes has inspired more and more people to plant vines in the back yards of their homes, along the driveways, on an arbor or the back fence, or even trained along a porch. They take up little space and require less care than many fruits. An average vine will produce anywhere from ten to twenty-five pounds of grapes, and different varieties ripen at different times, thus making possible a supply of grapes four or five months out of each year. Some varieties will store that many more months.

A great amount of work in hybridization and experimentation is going on by individuals and agricultural experiment stations so that nearly all grapes are now hybrids and more and more are seedless.

Wild grapes were plentiful in nearly all of the United States. Many of them have been hybridized with European grapes to form a vining type called American or *Vitis labrusca*. Varieties have been adapted to all climates so that some grapes are grown in all states, with California producing about 75 per cent of all commercial grapes (especially for wines and raisins). Southern California is no longer the leading grape growing area it once was, and San Diego County has only a few acres planted in commercial grapes. In the fall we can still buy some pink grapes which we harvest ourselves near Santa Ysabel. I recall an old house there with a wonderful Rose of Peru vine encircling the front porch—hope it is still there. Much of the sacramental wine comes from this grape which is quite distinctive in flavor. It also makes delicious grape juice. The grapes are small and black and originate from stock that the Mission Fathers brought to California.

We have wineries in the county that have their own vineyards, but they must import many of their grapes. An individual can make up to 200 gallons of his own wine legally. Some places have complete wine-making sets with directions should you be interested.

In January our nurseries have piles of pencil-sized sticks that are grape cuttings which can be planted from January to March. Grapes are not too particular about soil, so long as there is good drainage. A canyon lot makes a good place to plant some vines. They do not need a lot of water, but their roots are shallow and the leaves should be watched carefully for signs of too little water. If they begin wilting, give the vines a good soaking.

A cutting will be a pencil-sized stick from 14 to 18 inches. The bottom will be a straight cut, and the top slanting. To plant them, dig a hole and put the cutting in so there are at least two nodes (the bumps on the stick) under ground. Fill the hole and tamp down the earth. Water well and mulch about a foot around. The cutting will not do much the first year other than put out leaves and a few branches. At this stage you should plan a support for the vines. If the vines are beside a fence, they should be led toward it. A good tie is an old nylon stocking. Two posts about ten feet apart with three wires strung between them will accomodate two vines.

There are books available on growing grapes many of which are fully illustrated with fancy diagrams on how they should be pruned. The pruning patterns all have names and in vineyards there is no doubt some system is necessary. In California pruning is done in December and January when the leaves have dropped and the vines are as nearly dormant as they will be. The main idea is

to save some of last year's wood to grow this year's grapes. Myrtle Bates of Chula Vista has a most productive Concord that sprawls itself over her lath house and yields bushels of grapes every year. She says she trims off all the old branches she can reach and lets the vine take it from there. She fertilizes her garden all around and waters it as needed and the vine accepts its part. Some vines live as long as people, and trunks of old vines can be found measuring six to eight inches in diameter.

Grapes do come from seeds, but unless the parent is a well established variety, you cannot be certain what will be the end product. It is fun to see what will happen, but you may have to wait three or four years for the vine to bear. If you are able, search for one or two year old plants growing in cans. The two-year-olds will bear the next year. The cuttings will not bear until the third year and it is often better to let them go until the fourth.

Along the coast, care must be taken to choose a protected spot for the grape vines. Our fogs and chilly air are not to their liking. I live on a hill exposed to the ocean breeze. The exposure killed all the vines on my arbor in three years. A neighbor below me has vines trained on a fence next to another neighbor's garage and protected by a house which cuts off the breeze. He has an abundance of Concord grapes every year. A friend in Coronado grows grapes next to her garage which also shuts off the ocean breeze. However, the best areas are our warm valleys such as El Cajon and Escondido. They are ideal for grape growing and were at one time productive areas.

Because grapes will grow anywhere in the temperate zones, varieties have been adapted to many climatic needs. Seed catalogs such as Burpee and our Sunset Western Garden Book list varieties known to do well for us. The Concord, an American type introduced more than one hundred years ago is probably the most hardy, most adaptable, and best known. It is a cross between a wild grape and a European, first grown in Massachusetts. My observation is that it tastes different grown in different areas. Ours is sweeter and not so flavorful as a Concord grown where the air is chilling. It is the favorite for juicing, but is also popular as a table grape. There is now a seedless variety which is smaller and sweeter. It is perhaps the best for amateurs to begin with. Black in color, with a nice blossom with medium-sized bunches of grapes that usually ripen evenly, this variety looks luscious hanging down from an arbor or over a lath house.

Grapes come in many colors: black, white, pale green, amber, and pinks and reds. Besides the Concord, there are fine newer varieties of blacks such as the Buffalo and Steuben. White, pale green and amber grapes are harder to grow where the air is humid and chilly. Mildew and various diseases and bugs attack them. The Thompson Seedless, Interlakes Seedless, and the Niagaras and Ontarios are fine whites and greens that do well inland. They are among the finest table grapes available.

The reds and pinks stay on the vines longer and keep better. You will note they are the ones we see in the markets all through the winter. Usually stored in barrels of sawdust, they are kept in cool places. Among this group are the Catawbas, Tokays, Delawares, Cardinals and Emperors; they all have a bland flavor, but are crisp and mildy sweet. The Golden Muscat, one of the finest of table grapes, is sweet and sticky and attractive to bees. They are poor keepers, but heavy producers where the air is warm and dry.

Don't be confused by American, European and French hybrid varieties. Any of the above mentioned varieties are good for our climate. They are all hybrids, tested and good. If in doubt, remember you can't go wrong with Concord, Thompson Seedless or Tokay.

The flavor of any grape depends on many factors: the weather, the amount of sun and water, the degree of maturity, and the general culture. Since some of these factors are beyond human control, there is always a gamble in growing grapes. This is the agony wine grape growers ponder over in unfavorable weather. What determines good and bad vintage years is the balance of sugar and acid in the grape itself.

Since home-grown grapes can be harvested at their peak of maturity and flavor, the home gardener may have grapes at their best—providing he knows when to cut the bunches. When a grape has reached its mature color, the best test is to pull off a grape at the top of the bunch and taste it. There are other tests such as looking

for brown or shriveled stems, or soft berries and the shelling of the berry. Often the grape is too ripe if it shells. However,different varieties will react differently and you must experiment. Less maturity is a desirable quality in a grape to be used for jelly or juice because more acid is needed. When making juice, it is important to remember to cold press the juice, or heat no more than 150 degrees and never boil the mixture.

If you are interested in knowing more about grape growing, there are many good books in our public libraries. The techniques of pruning, girdling, fertilizing and cultivation are described in detail in the following books: SMALL FRUIT CULTURE by J.S. Shoemaker; FRUITS FOR THE HOME GARDEN by Ken and Pat Kraft. Both are readable and instructive. □

IN RAMONA:
Interesting House and Garden Plants, Unusual Succulents, Geraniums
ROCK MEADOWS
SPECIALTY NURSERY
Open Weekends—go through town to Magnolia, then north about a mile to Pile Street, turn left to
455 PILE STREET, *P.O. Box 488*, **RAMONA, Ca. 92065**

SPLENDID TREES FOR LANDSCAPING AND CHRISTMAS
(container grown)
Sixty pine varieties, plus cedars, sequoias, coral trees and kiwi vines.
4301 Lynwood Drive
Chula Vista, California
Open 9–5 422-2400
(just east of Hwy. 805 & Bonita Road)

LA COSTA FLOWER SHOP & NURSERY
German Peat Moss, 7.5 cubic foot bales
Pick up at Nursery.
400 La Costa Avenue
(714) 753-4336
Leucadia, Calif. 92024

McDANIEL'S
miniature roses

BUSH · TREE · CLIMBER · HANGING BASKET
hardy and everblooming
7523 Zemco St.
Lemon Grove, Ca. 92045
please phone (714) 469-4669

getting younger every day at
walker scott

The Giant Strelitzia

by ALICE CLARK

From CALIFORNIA GARDEN, Volume 40, Number 2, summber 1949.

TO THE casual observer, our giant strelitzias resemble any banana tree. This is partially correct in so far as they do belong to the same general family of *Museae*, but grow a little larger here than the fruiting variety. There are two species of this tall type in the United States, which are separated by the width of our continent. For some strange reason, it seems that our *S. nicolai* is not raised in the southeast. On the other hand, *S. augusta*, which is somewhat smaller, grows in Florida but, as far as I can discover, is not common here.

According to Hooker in the Curtis Botanical Magazine of sixty years ago, *S. nicolai* was of unknown origin. It was first noted as a distinct species in the Imperial Gardens of St. Petersburg, where it flowered in 1858 and was named by Regel and Korne after the Emperor Nicholas. Because this type does very well in San Diego, I am able to describe it first-hand.

Unlike the banana tree, which has a round trunk, the leaves of *S. nicolai* grow up in two flat ranks on each side of their center. The leaf stalks are thick and fleshy at their bases. Each new petiole rips out of the other, leaving decorative torn edges all up and down the stems. As the old leaves fall, a trunk is formed that takes the fan as high as twenty-five feet. The stiff, bright-green blade is shorter than its petiole. It is sometimes over four feet long, especially on the lower suckers, and half as wide, folded in on a strong rib and cupped at its blunt tip. The smooth edge gradually splits apart at some of the parallel veins, whipping to rags as it ages. For this reason it does better out of the wind.

The sharp-pointed, plum-colored spathes look like great dark birds caught in the base of the leaves, because their stem does not extend beyond the leaf axil. Usually they are too high on the tree for close examination, but my sketch was made from a stalk that was cut in Balboa Park three weeks ago and is still blooming. Each spathe rises from the neck of the other and faces in the opposite direction. The long dried bract may be seen at the top of the peduncle in the picture. The largest spathe in the drawing is eighteen inches in length. There is a tint of green near the tip and quantities of heavy pinkish nectar drip over the canoe-like sides. The color and form of these sheathes suggests the fierce rhinoceros, with horned snout, roaming the same countryside.

The flowers of *S. nicolai* are similar to those of *S. reginae*, except that the sepals are seven inches long and of a waxy white, instead of orange, with a pink flush on their short pedicel. The small blue upper petal and the two fused, lobed ones, that extend beyond it, lose their handsome colors early, turning a light brown. Many flowers come out of the same pocket and dry up on the stem, making the plant rather untidy, but there is usually some new bloom coming on, except in the cold season.

It seems unbelievable to me that none of the source material I have consulted on these strelitzias makes any mention of the several spathes that rise one above the other, as shown in my painting. The sculptural effect attained by this formation is most impressive. The curving lines of these turning heads is so beautiful that I was impelled to share them with you. Those who own modern homes where such dramatic flowers may be featured, should certainly plant a giant strelitzia, whose leaf form is so suited to their architecture in their garden scheme.

There are many fine specimens of *S. nicolai* in San Diego, where they thrive in a sunny sheltered spot, doing better with plenty of food. An authority in National City said that this variety stands more neglect than *S. regina*. This must be so as I saw one of these giants left growing vigorously in a basket over a period of years, waiting to be planted, that had established itself with great vigor. It sends up many side-shoots, which make good divisions if taken during the warm weather. They are, however, more susceptible to frost than the small type. These large plants

must also be hand-pollinated, like the lower forms. The seed is a little bigger, more brown than black and oval in shape but still flaunting the handsome orange velvet ruche on one side. *S. nicolai* combines nicely with *S. reginea*, enhancing the tropical atmosphere wherever used. □

HYPONeX® PLANT FOOD
Grows better plants, indoors or outdoors. Clean. Odorless & soluble. 10 oz.-$1.29. Makes 60 gals.
200 Item Catalog Free HYPONeX, COPLEY, OH. 44321

C. Studebaker
CONSULTING ARBORIST
TREES
COMPLETE SERVICE
STATE LIC. 273813 - P.L.-P.D. INS.
● RESIDENTIAL
● COMMERCIAL
● CONSTRUCTION
—15-YRS.—
S.D. CITY TREE SUPV.
—35-YRS.—
PRACTICING TREE SURGEON
277-9045

Antonelli Brothers
TUBEROUS BEGONIAS
2545 Capitola Road
Santa Cruz California 95062
36-page color catalog 25 cents

Calendar Art

A FLOWER arrangement by Mrs. Donald A. Innis (Virginia) and photographed by Mrs. W. E. Mackintosh (Betty) has been selected by the National Council of State Garden Clubs, "Vision of Beauty" 1976 Calendar.

Described in the calendar as "a most compatable combination of texture and color", the arrangement features *Protea repens* and *Calothamnus validus.*

Selection of the arrangements is made from photographs submitted by members of the National Federated Garden Clubs.

Mrs. Innis is a past president of the San Diego Floral Association and Mrs. Mackintosh, also a member of Floral, has been a staff photographer for many years for CALIFORNIA GARDEN MAGAZINE.

THE EARTHWORM

Nature's Soil Builder

A former horticultural consultant for an earthworm ranch in San Marcos, Mr. Tollefson teaches plant classes and also writes a weekly column for the San Diego Union.

by STEPHEN TOLLEFSON

BY NOW, just about everyone knows that earthworms are good for the garden. But few people really are aware why earthworms are good or how earthworms can be used to benefit the garden. This is unfortunate because the earthworm can be one of the best and most effective soil-improvement agents available to the gardener.

The earthworm is a primitive animal some 80 million years old. For as long as it has been in existence, it has been involved in the creation of topsoil. A sizeable portion—some scientists say most—of the topsoil in the world has been acted upon by the earthworm and shows definite improvement because of that activity. For all the earthworm's primitiveness, the presence of life on earth as we know it has been greatly influenced by its effects on the soil. Charles Darwin wrote:

> It is a marvelous reflection that the whole of topsoil. . .has passed every few years through the bodies of earthworms. It may be doubted if there are any other animals which have played so important a part in the history of the world as have these lowly creatures.

Earthworms build and maintain soil in a number of different ways. The simplest way is in their production of castings. When conditions are right for their activity, earthworms spend literally all their time eating. Their food source is the soil itself. As long as they are active, earthworms eat quantities of soil and produce a constant supply of castings. (Castings is a polite name for manure.) Because of the activity of the earthworm's digestive system, the castings are much richer in nutrients than was the soil that produced them. Tests conducted by the Connecticut Agricultural Experiment Station showed castings to contain five times the nitrate, seven times the available phosphorus, three times the exchangeable magnesium, eleven times the potash, and one and a half times the calcium of the soil the worms fed on.

Without doubt, castings are a choice fertilizer. They contain nearly all the nutrients needed by plants for healthy growth, in readily available forms. And they are so mild they never burn even the tenderest of plants. Some gardeners even use castings alone as a fertilizer on plants where very special attention is required.

Earthworms produce vast quantities of castings. On the average, an earthworm produces its own weight in castings every day it is active. Since healthy soils can contain over two million earthworms per acre, the production of castings can be sizeable. (Few soils in southern California support anywhere near that number of earthworms, but significant populations can be developed in most soils.)

In addition to castings, earthworms produce quantities of excreted and secreted fluids that are also high in nitrogen and other nutrients. Even when it grows old and dies, an earthworm benefits the soil. Its decomposing body is a source of nutrients. Seventy-two per cent of an earthworm's tissue (dry weight) is protein which is a rich source of nitrogen and other nutrients.

But earthworms do far more than fertilize the soil. They are also beneficial in maintaining good texture, aeration, moisture retention, and other physical characteristics that are so important to good soil and so often lacking in California soils.

Soil texture is improved partly by the worms' production of castings. The castings are granular and spongy in texture and help to loosen too-fine soils and improve moisture retention in coarse soils.

More importantly, earthworm tunnels provide excellent channels for air, moisture, and plant roots to travel through the soil. While they are tunnelling, the worms produce a secretion from their skins that coats the tunnels and prevents their collapse. The cementing effect is sufficiently long-lasting to be of significance. This combined with the worms' constant tunnelling activity makes

a permanent improvement in soil texture, unlike the short-lived effects of hoeing, plowing, or cultivation.

The beneficial effects of earthworms on soil texture can be readily and dramatically seen by introducing worms to worm-free soil. In tests a soil sample without worms had an initial absorption rate of .2 inches of rainfall per minute. Any more than that ran off. After earthworms had been introduced and allowed to work for only thirty days, the absorption rate improved four and a half times to .9 inches per minute. For the California gardener who has to contend with irrigation water running off compacted non-absorbent soil and down the drain, this constitutes a very significant improvement. Besides reducing waste and erosion, more water is available to plants.

The tunnelling and granulation also improve aeration of the soil. Roots must have oxygen in order to live. Roots growing in heavy compacted soils are often forced to live under oxygen-deficient conditions. By providing tunnels that supply air and drain away excess moisture, earthworms insure that plant roots will have an abundant air supply. Heavy soils also make it physically difficult for roots to penetrate and grow. By loosening up the soil, earthworms greatly simplify and accelerate the task of roots penetrating between soil particles. Often a root will grow directly along an earthworm's tunnel where there is nothing to impede its progress.

Earthworms are of undeniable value to the garden, improving the soil and plant growing conditions in many ways. They are of special value because they can be utilized as a tool by the gardener. Earthworms are readily available and easily used. Part two of this series entitled "Using Earthworms in the Garden" will explain how. □

(Continued from Page 13)

near the tops of their individual stalks. They are delicately three-petaled and beneath each conspicuous but gossamery white petal is a green floral leaf. The blossoms are one to one-and-a-half inches in breadth. Although its green components persist, the white petals fall after a few days. The picturesque Arrowheads are found in swamps, marshes along the edges of ponds and sluggish rivers and there is no need to learn separate species as all produce edible tubers. Where they grow underwater, wading Indians used either their toes or a long stick to dislodge the plants, allowing the tubers to float to the surface. This was a favorite food of North American Indians, Lewis and Clark as well as other explorers on this continent who were pleasantly introduced to it by friendly tribes. The tuber has a milky juice and is edible raw. Their slight bitterness is dissipated by cooking. They can be used like new potatoes, although their united sweetness and smoothness gives them more of a water chestnut flavor.

Pokeweed or *Phytolacca americana*, has many names such as Pigeonberry, Garget, Poke, Scoke, and Virginia Poke. Many soldiers writing home during the Civil War cut his own quill from the wing feather of a turkey, then squeezed some of the red juice from the ripe, deep purple berries of the pokeweed to use as ink. A few of these still legible letters can be seen in museums. This plant grows six to eight feet with leaves shaped like a lance head five to nine inches long. The white greenish flower grows in large clusters opposite the leaves. In the fall they are covered with long clusters of purple-black berries. The Indians found pokeweed delicious and some of the early adventurers on these shores were unstinting in their praise of this succulent plant. In America it is still a favorite green vegetable. The berries, seeds and roots are not edible. The tender sprouts should be gathered when they are no more than about eight inches tall. The skin and leaves should be removed saving the latter for greens. Simmer the whole stem in water for ten minutes, then throw this water away. Return the drained sprouts to the kettle adding very little water, some salt and quite a lot of butter or bacon drippings. Simmer slowly for half an hour so the seasoning can permeate the vegetable. Serve at once or combine with cream sauce.

One tip—before you start grazing, be sure you know the plants and also your local laws regarding their collection. □

now is the time

BEGONIAS

MARGARET LEE

✓ to watch the watering program; slow growth requires less watering but do not allow to dry out.
✓ to practice clean housekeeping—clear away old foliage and leaves.
✓ to start cutting back the cane and shrub types.
✓ to add more mix to pots as needed to keep roots covered.
✓ to spray for mildew and check for other pests.

BROMELIADS

THELMA O'REILLY

✓ to check in the cups and between the leaves for slugs.
✓ to remove damaged leaves, leaving at least two inches above soil line to protect new offsets against cold damage.
✓ to give added protection to soft, tender leaved varieties.
✓ to give colorful leaved plants more exposure to winter sun.
✓ to add frost hardy varieties to your collection.

CACTI & SUCCULENTS

VERNA PASEK

✓ to watch for blooming cacti and succulents. *Mammillarias* and *Neoporterias* in pots can be brought inside for enjoying and showing off. Place in suitable location, well-lighted, not too warm and avoid drafts.
✓ to watch for insects—cooler weather does not discourage such pests as scale and mealybug.
✓ to protect cacti and other tender succulents from frost. Most can tolerate colder temperatures if kept on dry side.
✓ to hold up on fertilizing; many of these unique plants need rest at this time of year.
✓ to check drainage in cactus gardens or pots. Cacti must have perfect percolation to avoid root rot.

CAMELLIAS

BENJAMIN BERRY

✓ to maintain a regular spray program. Dust with chlordane under and around plants to discourage leaf beetles.
✓ to maintain a regular watering program unless sufficient rains have fallen—they like moist soil but not wet.
✓ to pick up all fallen blooms to avoid an infestation of sclerotinia (petal blight).
✓ to make grafts.
✓ to transplant camellias. Remember not to fertilize newly transplanted bushes, but water well and often with a Vitamin B-1 solution.
✓ to continue feeding 2—10—10 or 0—10—10 to establish plants.
✓ to renew mulch where necessary, using either fir bark or pine needles.
✓ to select plants from nurseries while in bloom.
✓ to feed iron every other month to promote a healthy deep green.

DAHLIAS

✓ to dig the clumps as tops should have completely dried. Cut tops just above the ground. Store without dividing in vermiculite or sand, leaving the soil on that adheres to them. Keep in cool area.
✓ to inspect those tubers stored earlier for signs of shriveling; if too dry, add a little moisture.
✓ to start in February to prepare your garden spot for dahlia planting. Turn soil, add humus and fumigate; add humus, equal parts of superphosphate and sulphate of potash. Dig in well. Add fertilizer two or three weeks before planting.
✓ to start in February, some selected roots to send out sprouts which will make good cuttings. Apply bottom heat to encourage sprouting.

EPIPHYLLUMS

GEORGE FRENCH

✓ to check for pests—especially slugs and snails.
✓ to not over-water, check and protect from too much rain. However, do not allow to dry out.
✓ to feed in late January or February with a low nitrogen fertilizer, using a teaspoon to a quart of water when they start budding.
✓ to tie stems if grown on trellises.

FERNS

RAY SODOMKA

✓ to water gently, but do not soak as during the hot days. Cool nights keep their feet too cold. Beware of Santa Anas. Don't rely on the rains, they may not find your hidden or covered plants.

✓ to remove and remount *Platycerium* pups if you desire.

✓ to keep after slugs, snails and pill bugs. Winter does not stop them.

✓ to trim off dead fronds and keep surrounding areas clean. Use all dead material for compost. Give it back to nature.

✓ to replant spores.

✓ to cover and protect your plants during the night in frost areas, cover with newspaper, sheets or plastic bags. Put in garage if necessary.

✓ to relax on fertilizing. Use pellets more instead of liquid, due to cold nights.

✓ to keep checking for new and favorite varieties.

FUCHSIAS AND SHADE PLANTS

CHAD KROGH

✓ to protect from frost those plants which can be moved or covered.

✓ to clean up debris from hanging baskets, replace rusted hangers and swivels and retie upright plants to their supports.

✓ to insure that plants have a moist soil, but are not over-watered with "wet feet".

✓ to pinch plants pruned in the fall to create a fuller plant with more flowers.

✓ to provide fertilizer to plants that show fresh green growth.

✓ to prune (remove ½ to 2/3 of last year's growth) plants in frost free coastal areas. Wait until late February in colder areas.

✓ to root prune and repot those plants that have outgrown their containers. Remove ¼ to ½ of root mass at the same time as old top growth is pruned—repot with fresh soil mix.

✓ to start cuttings from fresh green growth after pruning. Root in sterile, moist sand or perlite in a sheltered ventilated area.

GERANIUMS

PHIL BUSH

✓ to protect plants from too much water.

✓ to protect plants from low temperatures; move them indoors if weather becomes cold for an extensive time. Place in a well-ventilated sunny room. Ones in the ground may be protected from frost by newspapers and aided by a good mulch. Uncover in daytime.

✓ to still take cuttings and start in sandy soil mix.

✓ to still prune and reshape your plants.

✓ to clean up any debris from around the plants.

✓ to feed lightly with high nitrogen fertilizer.

IRIS

✓ to plant bulbous type for spring bloom.

✓ to water the iris especially if rains are light—don't let them dry out.

✓ to have a regular spray program—use a copper oil spray to control rust. Control snails, slugs, and aphids.

✓ to keep ground and plants clean (remove brown fans).

✓ to start in February to feed all iris with a liquid 0—10—10 fertilizer. Follow directions carefully—DO NOT over-fertilize.

ROSES

SUE & DICK STREEPER

✓ to prune your roses. Pruning should be done with an eye to developing a strong plant. Take out all twiggy growth and old canes, leaving three to six strong young ones. Remove all dead and stubby growth from the bud union with a sharp pointed saw to encourage basal breaks.

✓ to plant bare-root roses as early as possible. Best to select plants from stock that you can inspect for good root growth and a vigorous, well-balanced budding. Before planting, cut out all crushed roots and make fresh cuts at the ends of all roots with sharp shears. Plant in as large a hole as possible from which one cubic foot of soil has been discarded; mix in one cubic foot of organic matter.

✓ to cover all plants with a dormant spray before new growth starts. Use both a fungicide and insecticide. Two applications used two weeks apart are desirable.

✓ to remove all debris and spray the soil around the plant where mildew and rust spores may hide.

VEGETABLES

GEORGE JAMES

✓ to plant started plants of broccoli, brussels sprouts, cabbage, cauliflower, celery, collards, chard.

✓ to plant seeds of early spring vegetables indoors during February, or look for started plants in a garden shop. See article this issue.

✓ to plant perennial vegetables and small fruits from bare root plants; plant onion sets.

leafin' thru

A FIELD GUIDE TO THE COMMON AND INTERESTING PLANTS OF BAJA CALIFORNIA by Jeanette Coyle and Norman C. Roberts, Natural History Publishing Company, La Jolla, CA., 206 pages, $11.00 hardcover; $8.50 paperback.

This handsome book is well described by its title: over 250 trees, shrubs, cacti, and the more conspicuous annuals are described along with the native uses and Mexican names. Most of the plants appear in color photographs on the page opposite their descriptions. The color and clarity of the photographs is generally good, and some are small masterpieces. Some show the plant in its natural surroundings, while others reveal the close-up delicacy of flowers and fruit. Many of the subjects are interesting as botanical oddities—some peculiar cacti, the well-known elephant tree, and a huge relative of the common ocotillo. But beyond the curiosity and variety of the endemic Baja flora, the authors give us a fresh look at some more familiar plants. For instance, we learn that the bark of our Western sycamore is boiled to make a coffee substitute in Mexico, and that Indians and early pioneers used pads of the common prickly pear as bandages for wounds. And you will find the book useful in identifying plants that range on our side of the border as well as in Mexico.

This field guide also contains a good deal of useful accessory material. There are maps, a glossary of both botanical terms and descriptive Spanish words, a key to plant families, lists of species by family and ecological zone, and essays on the geology, climate, and phytogeography of Baja California.

— Review by Stuart Macdonald

FEATURES OF EVOLUTION IN THE FLOWERING PLANTS, by Ronald Good, Dover Publications Inc., N. Y., 1974, 405 pages, $4.50.

This is the "story of evolution" from the botanist's eye and is a book that pioneers in the theory that there is a lack of balance in the modern approach to evolutionary problems. His study of the flowering plants shows how difficult it is to apply some of the more familiar and popular evolutionary concepts to this great section of the Plant Kingdom. The chapters deal with flowering plants or angiosperms, with special emphasis on the characteristics which make them of particular significance in the study of evolution. The book is illustrated with a great number of handsome drawings.

THE ROMANCE OF THE FUNGUS WORLD, by R. T. Rolfe and F. W. Rolfe, Dover Publications, Inc., N. Y., 1974, 307 pages, $3.50.

The mysterious mushroom which has played such an important role in mythology and legend is discussed in this book with a light touch and enthusiasm and the use of fungi is explored in medicine, in industry and in foods. The cultivation of edible mushrooms and poisonous mushrooms as well as the curious phenomena exhibited by fungi—that of exceedingly rapid growth and decay, attaining enormous size, changing color, growing in the dark—is discussed. Anyone who has had any interest in mushrooms and fungi will enjoy this very readable book.

MEDICINAL PLANTS AND THEIR HISTORY, by Edith Grey Wheelwright, Dover Publications, Inc., N. Y., 1974, 288 pages, $3.00.

Here is a fascinating story of how plants have played a fundamental role in the history of the

healing arts. There is a full description of modern cultivation of medicinal plants and the contemporary drug trade as well as the common practices of Egyptian, Indian, Hebraic, Greek and Roman times, the early Christian era, the Middle Ages and including the 16th through the 19th century in England. Many of the traditional remedies have a basis in scientific fact and are still being used today. It is a fascinating book for any plant lover to read who has ever asked himself "How was it discovered that foxglove contained an ingredient that could help those with cardiac problems".

Reviews by Theresa Yianilos

SKIPPER COPE'S

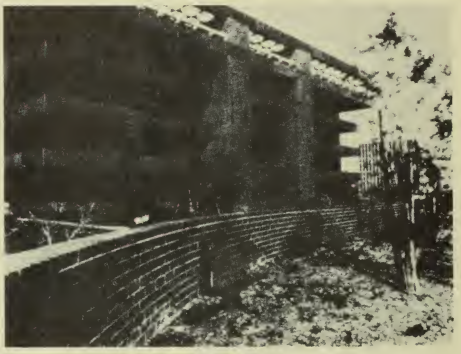
florascope

➳ Mini-composting—place a six inch layer of soil in a plastic pan or bag. Stir in vegetable and fruit parings, egg shells, coffee grounds and tea leaves as accumulated. Keep soil moist but not wet to avoid odor. Do not add meat or grease. Store in securely tied plastic bags for use as needed. May be used in any ordinary garden or potting soil.

➳ Have a nice window you would like to utilize for plants but there isn't enough room for a table or planter in front of it? Extend the window sill by fastening a six or eight inch board on supports and paint it the color of the woodwork. A shallow metal pan made to fit the area and filled with pebbles simplifies watering.

➳ If you notice masses of gum mixed with small particles of sawdust at the ground line of peach or plum trees, borers are present. Control at once before damage occurs to your trees.

➳ The rich dark green leaves of Strawberry plants make a nice edging for a flower bed. Later the bright red berries add a bonus in eye and palate appeal.



IF YOU'RE BUILDING A CASTLE
GIVE US A CALL
or
IF YOU'RE BUILDING A WALL
GIVE US A CALL

NO JOB TOO BIG OR TOO SMALL
GIVE US A CALL

HAZARD PRODUCTS, INC.

your complete masonry & landscape centers

three locations to serve you

Hazard Center Mission Valley- - - - - - 297—4144
Cabrillo Freeway & Friar's Road
Hazard Center El Cajon- - - - - - - - - - 448—7411
1155 Vernon Way, El Cajon
Hazard Center Chula Vista- - - - - - - - 427—2062
491 "C" Street, Chula Vista

HAZARD PRODUCTS

454-0404

Carlson Travel Service, Inc.

A TRAVEL-EXPERIENCED STAFF

1033 PROSPECT LA JOLLA, CALIFORNIA 92037 P. O. BOX 1453

G. S. JOHNSON ROSE NURSERY

Rose Specialists

Bushes - Climbers - and Tree Roses

Bare Roots in Season

in cans, available all year

Spray Materials and Fertilizers

24 YEARS IN SAME LOCATION

8606 Graves Ave Santee — Off Highway 67
corner Graves & Prospect — Phone 448 6972
Open 8 A M to 5 30 P M — Closed Wednesdays

MISSION HILLS NURSERY

City of San Diego's Oldest Nursery Always Growing Since 1924
INTERIOR PLANTS A SPECIALTY
VISIT OUR LARGE EXOTIC TROPICAL GREENHOUSE DISPLAY "IT'S DIFFERENT"

1525 Fort Stockton Drive San Diego 92103 Phone 295-2808

SPECIMEN PLANTS
for your home and for your garden
ALL SIZES
AND VARIETIES

Bennett's
GARDEN CENTER

7555 EADS AVENUE LA JOLLA 454 4241

The San Diego Floral Association

Founded 1907 — Incorporated 1910

San Diego's Oldest and Largest Garden Club

M-W-F (10-3) 232-5762

YOU ARE INVITED TO SUBSCRIBE TO *CALIFORNIA GARDEN MAGAZINE* OR BECOME A MEMBER OF *THE SAN DIEGO FLORAL ASSOCIATION* BY COMPLETING THE APPLICATION BLANK AND MAILING IT WITH YOUR CHECK TO: The San Diego Floral Association
Casa del Prado-Balboa Park
San Diego, California 92101

NAME _____

ADDRESS _____

ZIP _____

Check appropriate box:

☐ $5.00 Individual
☐ $6.00 Family
☐ $10.00 Sustaining
☐ $25.00 Contributing
☐ $3.00 Magazine ONLY

SAN DIEGO FLORAL ASSOCIATION

CASA DEL PRADO, BALBOA PARK
(Under the sponsorship of The Park and Recreation Dept., City of San Diego.)
Office Phone Number—232-5762
Third Tuesday, Casa del Prado
President: Mrs. Harley Cope—459-7688
6608 Avenida Bizarro, La Jolla 92037

FLOWER ARRANGERS' GUILD OF S.D.
First Thurs., Casa del Prado, 9:00 a.m.
Pres: Mrs. James Ard—276-6398
3031 Karnes Way, S.D. 92117

MEMBER CLUBS

ALFRED D.ROBINSON BRANCH OF THE AMERICAN BEGONIA SOCIETY, Second Tues., Homes of members, 10:30 a.m.
Pres: Mrs. Don Donahue—273-9677
3251 Innuit Avenue, S.D. 92117

CONVAIR GARDEN CLUB
First Wed., Casa del Prado, 7:30 p.m.
Pres: Mrs. Virginia Souderberg—582-7098
6197 Arno Drive, S.D. 92120

FLEUR DE LEAGUE
Second Mon., Homes of members, 10:30
Pres: Mrs. Herbert Bissell—453-2963
2664 Costebelle Dr., La Jolla 92037

IKEBANA INTERNATIONAL CHAPTER NUMBER 119, Fourth Wed., Casa del Prado 10:00 a.m.
Pres: Mrs. B. Donald Gaw—485-0116
13818 Tam O'Shanter Ct. Powav 92064

LA JOLLA GARDEN CLUB
Third Tues., 1:00 p.m., LaJolla Women's Cl
715 Silverado Road, La Jolla, CA.
Pres: Mrs. Bolivar Roberts—454-4988
939 Coast Blvd. La Jolla, 92037

LAS JARDINERAS
Third Mon., 10:00 a.m., Homes of mem.
Pres: Mrs. Edward C. Walter—454-1383
1512 Copa de Oro, La Jolla 92037

ORGANIC GARDENING SOCIETY
Third Fri., Casa del Prado, 7:30 p.m.
Pres: Fred Nimtz—479-7585
3815 Valley Vista Road, Bonita 92002

PALOMAR DISTRICT, CALIFORNIA GARDEN CLUBS, INC.
Director: Mrs. Roy K. Jones II—222-9737
3971 Del Mar Ave., S.D. 92107

POINT LOMA GARDEN CLUB
Second Wed., S.D. Federal, Rosecrans and Canon, 10:00 a.m.
Pres: Mrs. O. M. Conoley—223-7769
758 Cordova Street, S.D. 92107

SAN CARLOS GARDEN CLUB
Fourth Tues., San Carlos Club, 6955 Golfcrest Drive
Pres: Mrs. Charles Roop—466-0994
4235 Cobalt Drive, La Mesa 92041

SAN DIEGO BONSAI SOCIETY, INC.
Second Sun., Casa del Prado, 1-5:00 p.m.
Pres: Dr. Herbert Markowitz—224-8552
876 Armada Terrace, S.D. 92106

SAN DIEGO BOTANICAL GARDEN FOUNDATION, INC.
Second Thurs., Casa del Prado
Pres: Mrs. Joseph Kenneally—223-6183
2260 Catalina Blvd., S.D. 92107

SAN DIEGO CACTUS & SUCCULENT SOCIETY, 2nd Sat., Casa del Prado, 1:30 pm
Pres: Mr. Martin Mooney—427-6796
97 "K" Street, Chula Vista 92011

SAN DIEGO CAMELLIA SOCIETY
Third Wed., Casa del Prado, 7:30 p.m.
Pres: Capt. Ben H. Berry—435-2562
471 Country Club Lane, Coronado 92118

SAN DIEGO CHAPTER, CALIFORNIA NATIVE PLANT SOCIETY, Fourth Wed., Casa del Prado, 7:30 p.m.
Pres: Mr. Fred Sproul—222-8938
P.O. Box 7497, San Diego 92107

SAN DIEGO COUNTY DAHLIA SOCIETY
Fourth Tues., Casa del Prado, 7:30 p.m.
Pres: Mr. Abe Janzen—277-4473
3521 Belford Street, S.D. 92111

SAN DIEGO COUNTY ORCHID SOCIETY
First Tues., Casa del Prado, 7:30 p.m.
Pres: Mr. David Grimes—755-0798
13651 Nogales Drive, Del Mar 92014

SAN DIFGO COUNTY WILDLIFE FED.
Pres: Frank Tipton—726-3853
765 Alta Vista Drive, Vista 92083

SAN DIEGO EPIPHYLLUM SOCIETY
Second Wed., Casa del Prado, 7:30 p.m.
Pres: Mr. Donald Irwin—469-2469
4124 N. Rogers Rd., Spring Valley 92077

SAN DIEGO FUCHSIA SOCIETY
Sec. Mon., Casa del Prado, 7:30 p.m.
Pres: William Selby—424-3432
1333 Triton Ave., S.D. CA. 92154

SAN DIEGO GERANIUM SOCIETY
Sec. Tues., Casa del Prado, 7:30 p.m.
Pres: Mrs. Wm. Cavanaugh—224-9208
4377 Loma Riviera Ct., S.D. 92110

SAN DIEGO/IMPERIAL COUNTIES IRIS SOCIETY, Third Sun., Casa del Prado, 1:30 p.m.
Pres: Ray Chesnik—744-3851
418 Buena Creek Road, San Marcos

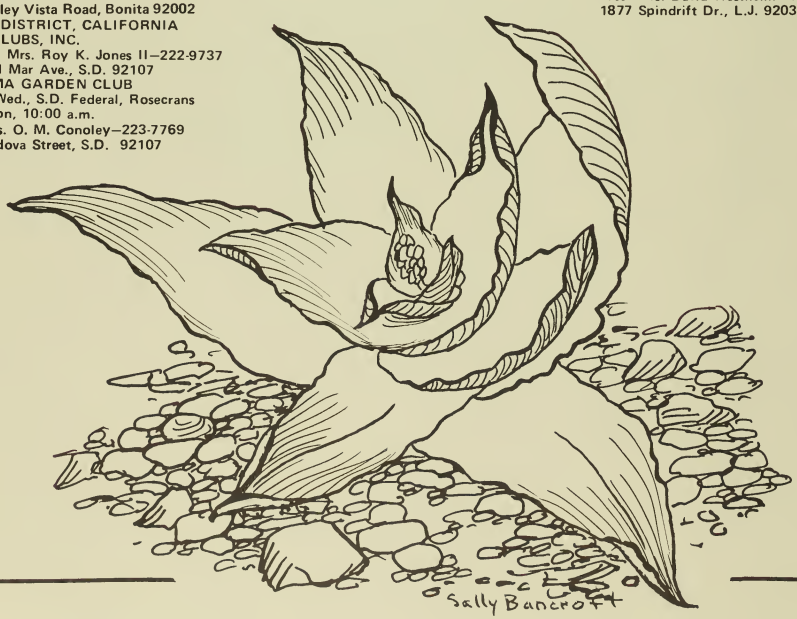
SAN DIEGO ROSE SOCIETY
Third Mon., Casa del Prado, 7:30 p.m.
Pres: Mr. Richard Bechtel—442-7180
10212 Vista Delacruz, La Mesa 92041

SAN DIEGUITO GESNERIAD CLUB
Pres: Mrs. Roman Shore—728-7044
P.O. Box 828, Fallbrook 92028

SOUTHWEST HEMEROCALLIS SOCIETY
Four meetings per year, Oceanside Federal Savings, Vista, California
Pres: Mr. Ray Chesnik—744-3851
418 Buena Creek Rd., San Marcos 92069

SOUTHWESTERN GROUP, JUDGES' COUNCIL CALIFORNIA GARDEN CLUBS, INC., First Wed., Casa del Prado, 10:30 a.m.
Pres: Mrs. Donald Innis—225-1464
3211 Trumbull, S.D. 92106

THE VILLAGE GARDEN CLUB OF LA JOLLA, Fourth Thurs., 1:00 p.m., L.J. United Methodist Church, 6063 La Jolla Blvd.
Pres: Mrs. David Westheim—459-9485
1877 Spindrift Dr., L.J. 92037



RETURN REQUESTED
RETURN POSTAGE GUARANTEED

SECOND CLASS POSTAGE PAID AT SAN DIEGO

CALIFORNIA GARDEN
San Diego Floral Association
Casa Del Prado, Balboa Park
San Diego, CA 92101

NO ONE GROWS A GARDEN
THE WAY THEY USED TO DO,
WITH CORIANDER, EYEBRIGHT,
MARJORAM AND RUE.

HERBS THAT SERVED OUR FOREBEARS,
HELPED TO CURE THEIR ILLS;
BONESET AND CAMOMILE,
HOREHOUND, SQUILLS.

SOUTHERN WOOD FOR FEVER,
FENNEL FOR THE EYES,
BEE BALM, WITH LEMON SCENT,
SAFFRON FOR DYES.

SHOPS ARE FULL OF REMEDIES,
WONDERFULLY DONE.
WOULDN'T IT BE NICE TO GROW
A DRUGSTORE IN THE SUN?

—Katherine VanDerVeer